MATHS

Fractions

1. Fraction is defined as a part of awhole.

2. In fraction $\frac{p}{q}$, p is called numerator and q is calleddenominator.

3. Fractions can be shown on a number line. Every fraction has a point associated with it on the number line.

4. Fractions with same denominators are called likefraction.

5. Fractions with different denominators are called unlikefraction.

6. Fractions in which denominator is greater than the numerator are called properfractions.

7. Fractions in which numerator is greater than or equal to denominator are called improperfractions.

8. A number consisting of a whole number part and a fractional part is called a mixednumber.

9. Conversion of an improper fraction to mixed number:

    Example: $\frac{13}{5} = \text{Quotient} \frac{\text{Re mainder}}{\text{Divisor}} = 2\frac{3}{5}$

10. Conversion of a mixed number to an improper fraction:

    Example:

    D = Denominator, N = Numerator,

    WN = Whole Number

    $3\frac{1}{4} = \frac{(D \times WN) + N}{D} = \frac{(4 \times 3) + 1}{4} = \frac{12 + 1}{4} = \frac{13}{4}$

11. Two or more fractions representing the same part of a whole are called equivalentfractions.

12. In two equivalent fractions, the product of numerator of the first fraction and the denominator of the second is equal to the product of denominator of the first and numerator of thesecond.

13. A fraction is said to be in its simplest (or lowest) form if its numerator and denominator have no common factor except1.

14. Comparison of fractions
    i. Among two fractions with the same denominator, the one with the greater numerator is the greater of the two.
    ii. Among two fractions with the same numerator, the one with the smaller denominator is the greater of the two.
    iii. Let $\dfrac{a}{b}$ and $\dfrac{c}{d}$ be two given fractions. Cross multiply as shown: $\dfrac{a}{b}\times\dfrac{c}{d}$, and find the cross products ad and bc.

    If ad > bc then $\dfrac{a}{b} > \dfrac{c}{d}$.

    If ad = bc then $\dfrac{a}{b} = \dfrac{c}{d}$.

    If ad < bc then $\dfrac{a}{b} < \dfrac{c}{d}$.

15. Sum of like fractions = $\dfrac{\text{Sum of their numerators}}{\text{Common denominator}}$

16. For adding unlike fractions, first change them into equivalent like fractions and then add.

17. Difference of like fractions = $\dfrac{\text{Difference of their numerators}}{\text{Common denominator}}$

18. For subtracting unlike fractions, first change them into equivalent like fractions and then subtract.